

ABSTRACT OF THE DISCLOSURE

An exhaust manifold is provided having ceramic inner layer that is highly resistant to cracking from thermal cycling. In a preferred embodiment, the ceramic inner layer is slip cast from a slip composition having a major amount of fused silica which has an amorphous structure. The manifold also has a ceramic insulation layer, a strain isolation layer and an outer structural layer in various embodiments. According to one embodiment, the strain isolation layer is provided in the form of an intumescent mat that expands on heating and contracts on cooling up to a certain crossover temperature, above which it loses the ability to contract on cooling. In a preferred embodiment, a catalyst-coated support body is provided in the exhaust manifold. As exhaust gases pass through the manifold, noxious components of the exhaust gases begin to convert to environmentally benign species via the catalyst prior to reaching the catalytic converter. Methods of making an exhaust manifold also are provided.